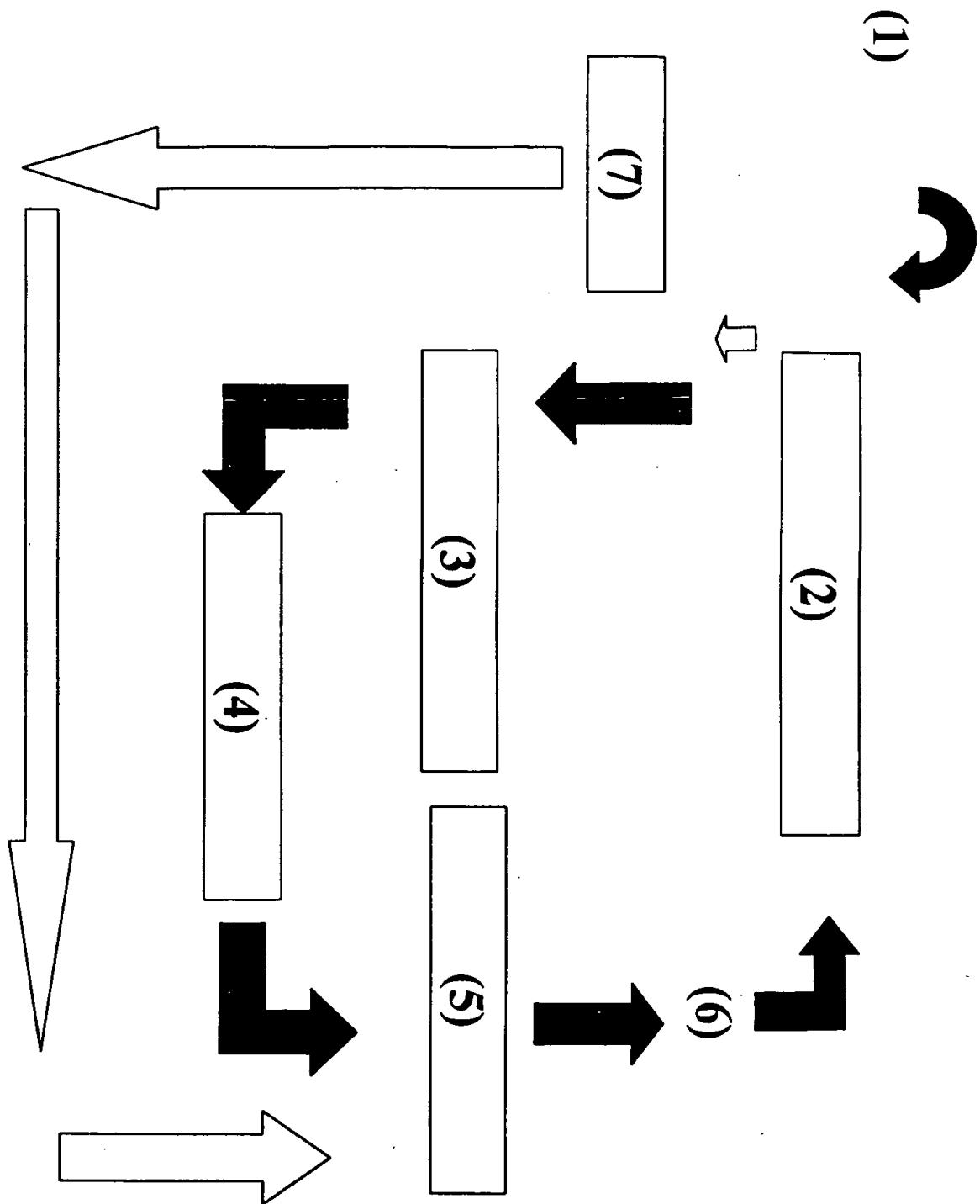


Fig. 1



Performance Characteristics

Experimental Descriptors

Synthesis

- Reagents
- Preparation Module
- Conditions
- Treatment
- ...

Reactor

- Types
- Features
- Catalyst Morphology
- ...

Performance Characteristics

First Order Catalyst Characteristics

- Crystallinity
- Defect Structures
- Particle Size Distribution
- ...

Second Order Catalyst Characteristics

Test Characteristics

- Reaction Conditions
- Starting Material - Composition
- ...

Second Order Catalyst Characteristics

- Redox Properties
- BET
- Heat of Adsorption
- Aridity
- ...

Fig. 2

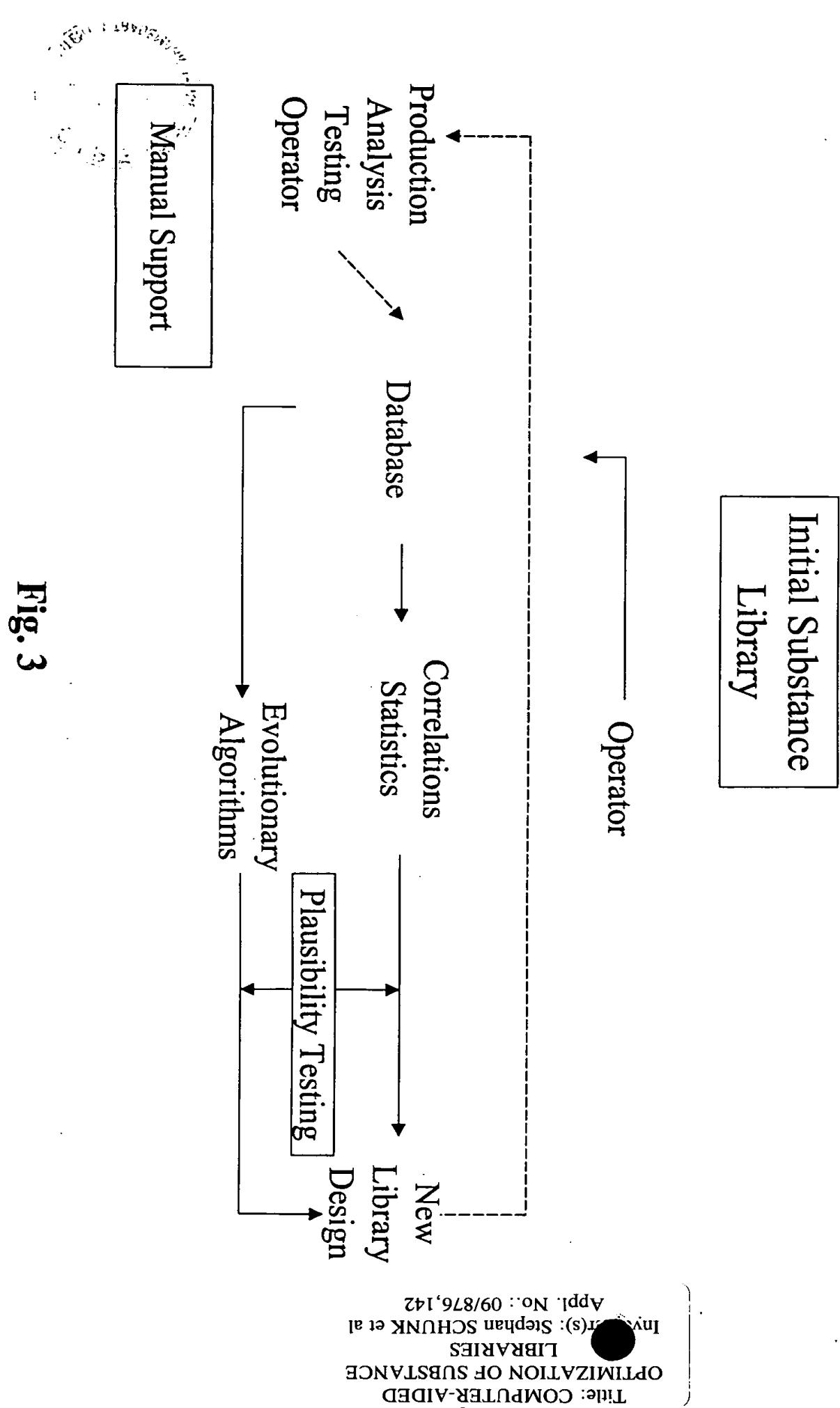


Fig. 3

Data Flow and Material Flow

Raw Material Store

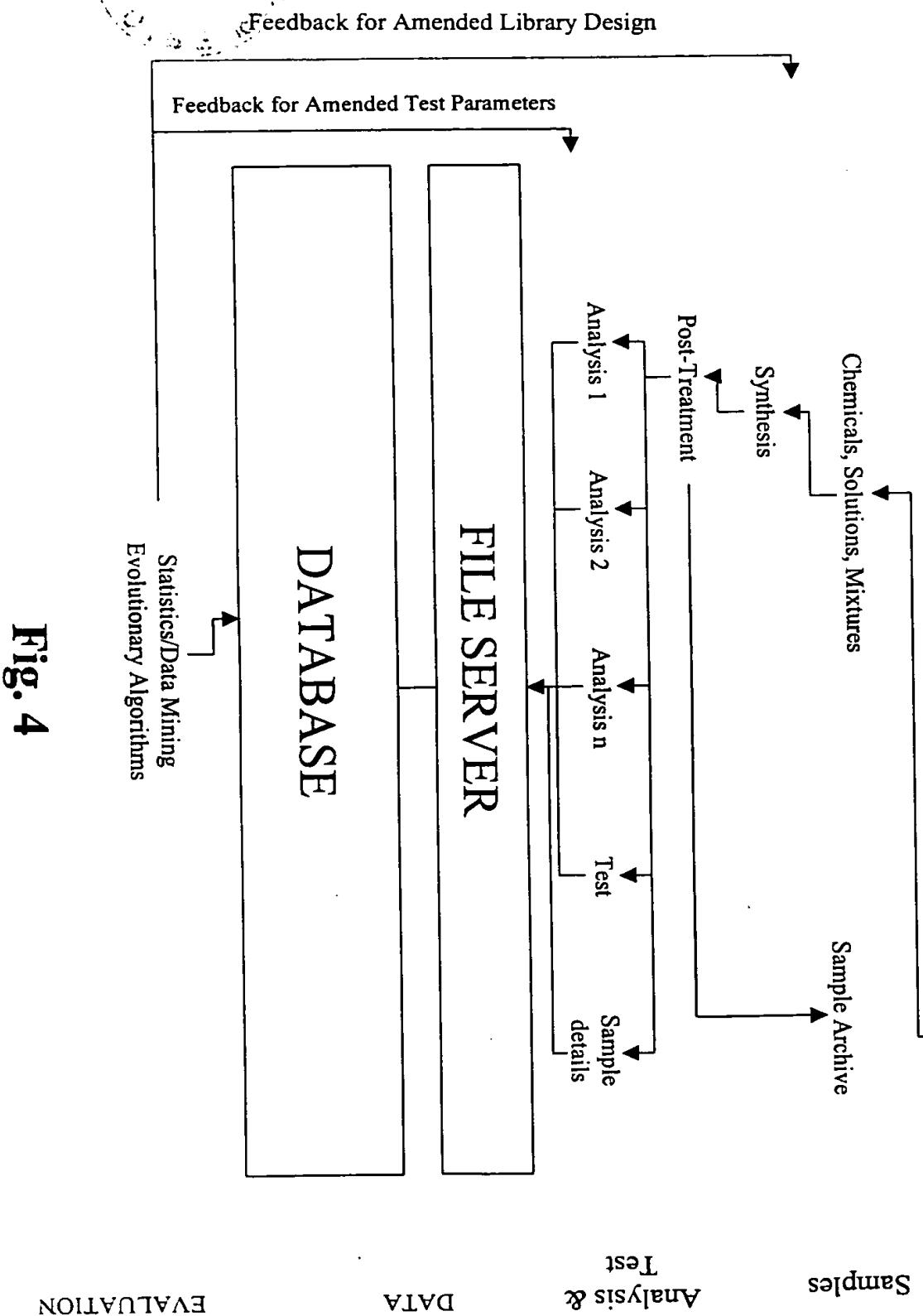


Fig. 4

Original Library Design and Tests Using the Entire Parameter Space

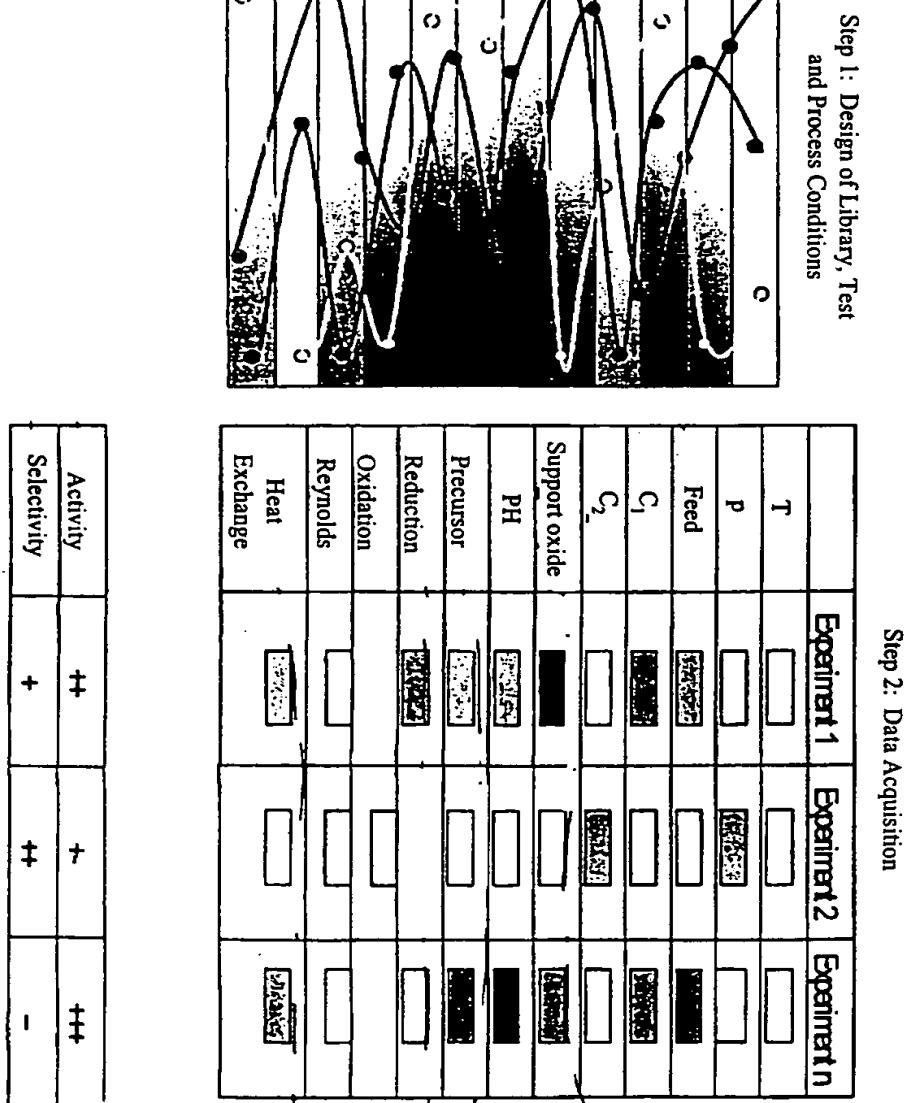


Fig. 5a

Regression Analysis, Energies of the Parameter Space

Step 3: Evaluation of the Significant of the Design and Test Parameters

Step 4: Test of the Regression Analysis

Step 5: Amended Design of the Library, Test and Process Conditions

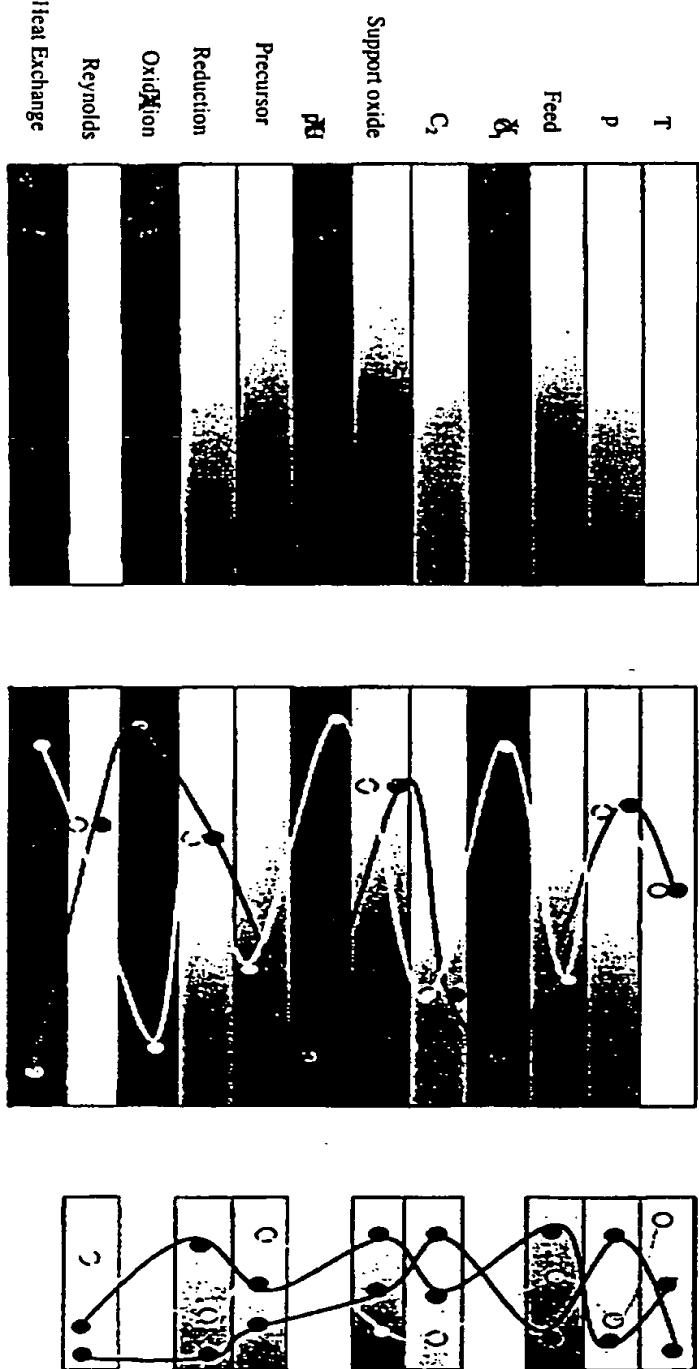


Fig. 5b

Principle of Genetic Algorithms

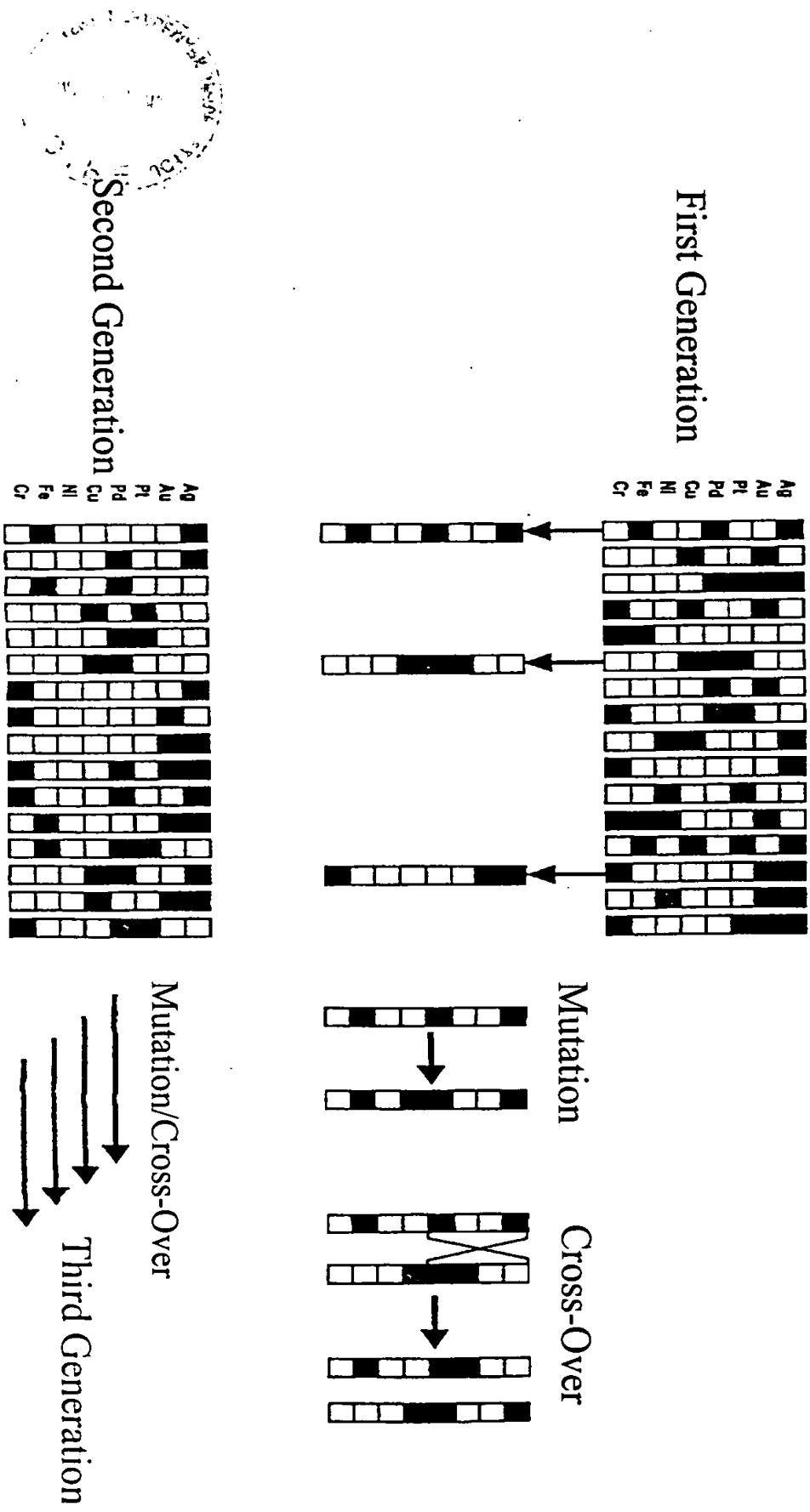


Fig. 5C

Sensitivity Analysis of the Parameters of the Initial Library Pareto Diagram

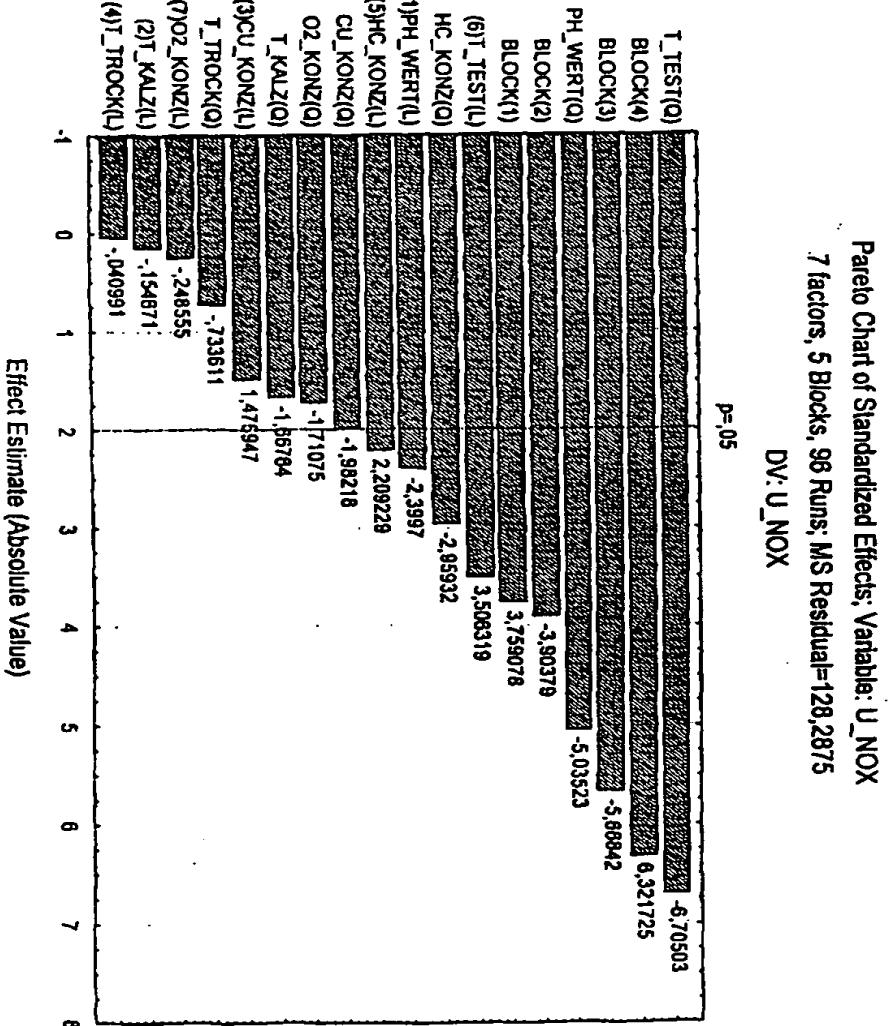


Fig. 6

Sensitivity Analysis of the Parameters of the 1st Optimized Library Pareto Diagram

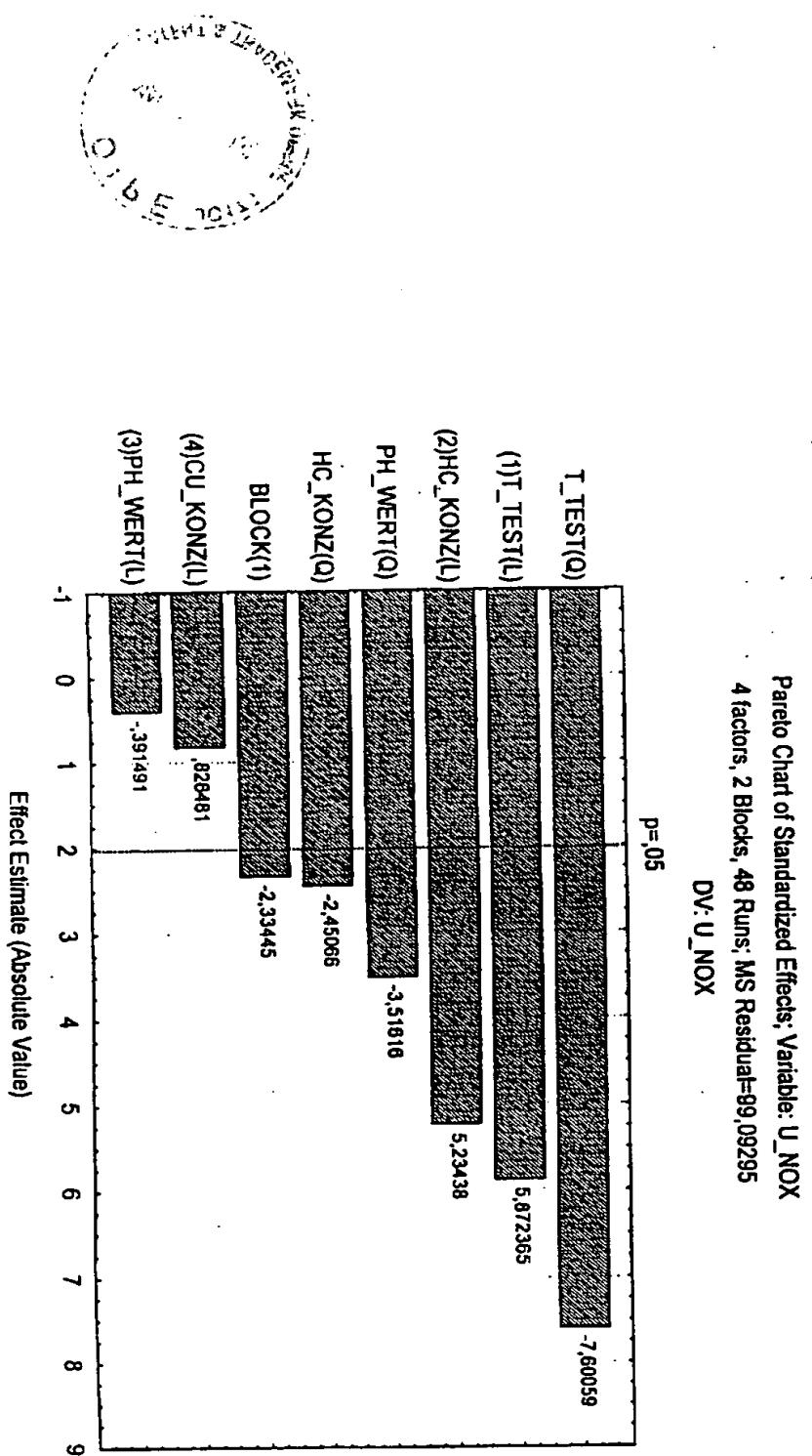


Fig. 7